

# Claims

- [c1] 1.A dual-band antenna, configured for operation within two non-harmonically related frequency bands, comprising:  
an antenna element extending from a ground plane, the antenna element electrically isolated from the ground plane; and  
a tubular sleeve, electrically isolated from the ground plane, coaxial with the antenna element.
- [c2] 2.The antenna of claim 1, further comprising a dielectric spacer located between the ground plane and the sleeve.
- [c3] 3.The antenna of claim 2, wherein the dielectric spacer has a thickness and dielectric constant selected to create a desired sleeve-ground plane capacitive coupling.
- [c4] 4.The antenna of claim 2, wherein the dielectric spacer is a dielectric coating on one of the ground plane, the sleeve or the ground plane and the sleeve.
- [c5] 5.The antenna of claim 1, wherein an outer diameter of the antenna element and an inner diameter of the sleeve are selected to create a desired sleeve-antenna element capacitive coupling.

- [c6] 6.The antenna of claim 5, wherein a dielectric material is positioned between the sleeve and the antenna element.
- [c7] 7.The antenna of claim 1, wherein the ground plane is a radiating element of a second antenna.
- [c8] 8.The antenna of claim 7, wherein the second antenna is one of a GPS and a SDAR antenna.
- [c9] 9.The antenna of claim 1, wherein the antenna element is the inner conductor of a coaxial cable extending through an aperture in the ground plane; and an outer conductor of the coaxial cable is coupled to the ground plane.
- [c10] 10.The antenna of claim 1, wherein the dual non-harmonically related frequency bands are 802.11a and 802.11b/g Wi-Fi frequency bands.
- [c11] 11.The antenna of claim 1, wherein the dual non-harmonically related frequency bands are a low frequency band and a high frequency band; the high frequency band being more than double the frequency of the lower frequency band.
- [c12] 12.The antenna of claim 1, wherein the antenna element extends less than 35mm from the ground plane.

- [c13] 13. A dual band Wi-Fi antenna, comprising:  
an antenna element extending through an aperture in a ground plane, electrically isolated from the ground plane;  
a sleeve coaxially surrounding a portion of the antenna element, electrically isolated from the antenna element;  
the antenna element spaced away from the ground plane by a dielectric spacer.
- [c14] 14. The antenna of claim 13, wherein the dimensions of the antenna element, sleeve and dielectric spacer are selected to provide the antenna with a standing wave ratio of less than 2 when operated in each of the dual bands.
- [c15] 15. The antenna of claim 13, wherein the sleeve is tubular.
- [c16] 16. The antenna of claim 13, wherein the ground plane is a radiating element of a second antenna.